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Federal-State Cooperative

Snow Surveys and Water Supply Forecasts

# Montana and Northern Wyoming Upper Missouri, Upper Columbia and Yellowstone Rivers

SOIL CONSERVATION SERVICE

UNITED STATES DEPARTMENT OF AGRICULTURE

AND

MONTANA AGRICULTURAL EXPERIMENT STATION

In cooperation with the U. S. Forest Service, U. S. Geological Survey, National Park Service, U. S. Bureau of Reclamation, State Engineers of Montana and Wyoming and other Federal, State and local Organizations.

—— AS OF ——

MAY 1, 1955

UNITED STATES DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

TO RECIPIENTS OF COOPERATIVE SNOW SURVEY
AND WATER SUPPLY FORECAST REPORTS.

Forecasts by U. S. Weather Bureau of total annual streamflow October-September, inclusive, at more than 300 gaging stations are issued monthly January through May in the publication WATER SUPPLY FORECASTS FOR THE WESTERN UNITED STATES.

Weather Bureau forecasts of runoff presented in that bulletin are computed from procedures based on mathematical analysis of the relation between precipitation and runoff.

The Weather Bureau bulletins may be secured by writing to:

Hydrologist in Charge
River Forecast Center
U. S. Weather Bureau
712 Federal Office Building
Kansas City 6, Missouri

For current information on local river and flood conditions, reference should be made to the appropriate River District Office, listed below:

| | |
|---|---|
| Meteorologist in Charge.....<br>Weather Bureau Office<br>Box 1705<br>Helena, Mont. | Missouri River and tributaries above Fort Peck Dam; Milk River |
| Meteorologist in Charge.....<br>Weather Bureau Airport Station<br>Box 1338<br>Billings, Mont. | Yellowstone River and tributaries. |
| Meteorologist in Charge.....<br>Weather Bureau Airport Station<br>R.F.D. #1<br>Spokane, Washington | Columbia River and tributaries above and including Grand Coulee Dam. |

State of Montana

FEDERAL - STATE COOPERATIVE

SNOW SURVEYS and WATER SUPPLY FORECASTS

for

MONTANA AND NORTHERN WYOMING

(Upper Missouri and Upper Columbia River Basins)

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Soil Conservation Service
U. S. Department of Agriculture
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Montana Agricultural Experiment Station
Bozeman, Montana

Report issued by:

Truman C. Anderson
State Conservationist
of Montana

M. M. Kelso, Director
Montana Agricultural
Experiment Station

WATER SUPPLY OUTLOOK
FOR 1955 SEASON
MAY 1, 1955

A fair water supply outlook still exists over Montana on the last snow survey of the season. Although April precipitation on the valleys and over the mountains was heavy, the resulting computations for seasonal stream-flow were raised slightly but not above normal. Irrigation water will probably be short during August.

The Columbia Basin streams are forecast to flow 86 to 90 per cent average, while the Missouri Basin streams will produce from 73 to 87 per cent average.

Reservoir storage is generally better than on April 1 with some gains in the southern part of the state. Generally the water storage condition is good.

Stream-flow during the month from the mountains has been below average due to cold, stormy weather during the month.

JEFFERSON RIVER:

The prospects for better than a "fair" water supply from the Jefferson River did not develop even with a stormy April. The May first revisions to the forecast were upward about 2 to 9 per cent. The anticipated April-September discharge should be 951,000 acre feet or 82 per cent average; considerably better than last year's flow which was only 55 per cent average.

MADISON RIVER:

Although the snow-pack of May first was exceptionally heavy on the snow courses this late in the season, it is believed the stream-flow will be only about 85 per cent of the usual occurrence. This is not as large as last season--probably 15 per cent less.

GALLATIN RIVER:

The May first snow-pack is exceptionally heavy for so late in the year. Taking into consideration the dry months this past fall and early winter, the resulting runoff this season is forecast to reach 426,000 acre feet from April through September, which is a larger flow than last season but still only 87 per cent of average conditions. The usual late August and early September shortage of water will occur, and probably a little earlier and more pronounced than last year.

MISSOURI MAIN STEM:

The outlook for this section of the Missouri is better than last year by 20 per cent. The inflow to Toston Lake should be approximately 2,108,000 acre feet from April through September or 84 per cent average. The 1954 season produced only 1,561,000 acre feet. The 10-year average, 1943-52, for this period is 2,517,000 acre feet.

UPPER YELLOWSTONE RIVER:

The 1955 outlook for irrigation water supply along the Yellowstone is a little less than "fair." Although the snow-pack on May 1 is slightly above average, the pack was late in arriving and fell on relatively dry soil. This was evident in the disappearance of the April 1-6 snowstorm that caused very little rise in the rivers. The computation of the present snow-pack into seasonal runoff show that 1,610,000 acre feet of water will pass Corwin Springs during the April-September period or 80 per cent average. Last season 2,044,000 acre feet passed that place or one per cent above average. The flow at Billings is expected to be about 3,126,000 acre feet or 71 per cent average. The Shields River should produce 62 per cent of average flow for that stream. The Musselshell River is in the same bracket with a forecast of 62 per cent average for April through September. The Clark Fork of the Yellowstone River should have a flow of 408,000 acre feet for the season or 65 per cent of usual.

## COLUMBIA RIVER BASIN

FLATHEAD RIVER:

A "good to fair" water supply for the 1955 season is expected from the Flathead River tributaries. All forecasts have been revised upward over those issued on April first. Most high elevation courses showed an increase in water content over April first measurements by 2 to 3 inches. Although the predicted runoff is not up to normal, or as high as last season, the supply will meet most demands. The flow into Hungry Horse reservoir is forecast to be 1,920,000 acre feet from April through September or 85 per cent average. Last season the runoff for this period was 2,850,000 acre feet or 126 per cent average. We can expect almost a million less acre feet than last season. The heavy snow-pack on the North Fork of the Flathead River Basin should produce about 94 per cent of the average flow from April through September, while the Middle Fork should produce 88 per cent of the average flow. Last year's flow was 150 and 130 per cent average, respectively. It is evident that the seasonal runoff will be considerably less than last year by about 850,000 acre feet.

CLARK FORK RIVER:

The Clark Fork River tributaries will produce only a "fair" water supply this season. The snow-pack increased slightly during April, however not sufficient to bring the forecast runoff up to the usual amount. At the gaging station above Missoula only 86 per cent of the average seasonal flow is expected or 1,416,000 acre feet for the April-September period. Last season the runoff was 1,737,000 acre feet or 95 per cent average. The Bitterroot River at Darby is expected to flow 510,000 acre feet or 86 per cent average. The Blackfoot River at Bonner is predicted to flow 890,000 acre feet or 90 per cent average. The April-September runoff at St. Regis is estimated at 3,890,000 acre feet or 86 per cent average. Last season 4,884,000 acre feet of water passed the station during that period or 110 per cent average flow. The Clark Fork River at Cabinet Gorge near the Idaho boundary is expected to discharge 12,000,000 acre feet of water out of Montana during the April-September period or 88 per cent the usual flow.

# MONTANA STREAM-FLOW FORECASTS MAY 1, 1955

| UPPER MISSOURI RIVER IN MONTANA | Seasonal Stream-Flow in Thousands of Acre Feet FORECAST RUNOFF | % 10-Yr AVG. | FORE-CAST PERIOD | Measured Runoff* 1953 | 1952 | 10-Yr. Avg. 1943-52 |
|---|---|---|---|---|---|---|
| RED ROCK RIVER | | | | | | |
| Monida (near) (1) | 71 | 80 | Apr-Sept | 72 | 126 | 89 |
| | 66 | 76 | Apr-July | 72 | 124 | 88 |
| Kennedy Ranch (at) | 67 | 73 | Apr-Sept | 72 | 126 | 92 |
| BEAVERHEAD RIVER | | | | | | |
| Barratts (at) | 153 | 75 | Apr-Sept | 170 | 222 | 204 |
| | 116 | 75 | Apr-July | 130 | 169 | 154 |
| BIG HOLE RIVER | | | | | | |
| Melrose (near) | 665 | 82 | Apr-Sept | 745 | 808 | 811 |
| | 606 | 81 | Apr-July | 699 | 761 | 748 |
| JEFFERSON RIVER | | | | | | |
| Sappington (at) | 951 | 82 | Apr-Sept | 1006 | 1135 | 1160 |
| | 844 | 82 | Apr-July | 921 | 1025 | 1025 |
| MADISON RIVER | | | | | | |
| West Yellowstone (near) | 180 | 84 | Apr-Sept | 207 | 248 | 216 |
| | 137 | 83 | Apr-July | 158 | 192 | 165 |
| Grayling (near) (2) | 380 | 83 | Apr-Sept | 434 | 563 | 457 |
| | 301 | 83 | Apr-July | 347 | 458 | 363 |
| McAllister (near) (3) | 668 | 85 | Apr-Sept | 718 | 961 | 782 |
| | 539 | 85 | Apr-July | 577 | 796 | 633 |
| GALLATIN RIVER | | | | | | |
| Gateway (near) | 426 | 87 | Apr-Sept | 404 | 596 | 485 |
| | 367 | 89 | Apr-July | 345 | 524 | 413 |
| Logan (at) | 437 | 83 | Apr-Sept | 442 | 745 | 528 |
| | 374 | 83 | Apr-July | 379 | 665 | 452 |
| MISSOURI RIVER | | | | | | |
| Toston (at) (3) | 2108 | 84 | Apr-Sept | 2139 | 2895 | 2517 |
| | 1783 | 83 | Apr-July | 1868 | 2554 | 2165 |
| Fort Benton (at) (4) | 3209 | 85 | Apr-Sept | 3726 | 3912 | 3767 |
| | 2705 | 84 | Apr-July | 3259 | 3382 | 3205 |
| Loma (at) (4) | 3732 | 82 | Apr-Sept | 5035 | 4562 | 4551 |
| | 3186 | 81 | Apr-July | 4515 | 3996 | 3919 |
| Zortman (near) (4) | 4050 | 82 | Apr-Sept | 5886 | 5116 | 4939 |
| | 3447 | 82 | Apr-July | 5298 | 4440 | 4229 |
| Ft.Peck Dam(below)(5) | 4146 | 85 | Apr-Sept | 5798 | 5223 | 4878 |
| | 3593 | 84 | Apr-July | 5353 | 4658 | 4267 |

(1) Observed flow plus change in Storage in Lima Reservoir
(2) Observed flow plus change in Storage in Hebgen Lake
(3) Observed flow plus change in Storage in Hebgen and Ennis Lakes
(4) Observed flow plus change in Storage in Canyon Ferry
(5) Observed flow plus change in Storage in Canyon Ferry and Ft. Peck Reservoirs
(*) Preliminary data furnished by U. S. Geological Survey, subject to correction

MONTANA STREAM-FLOW FORECASTS May 1, 1955

| UPPER MISSOURI RIVER IN MONTANA | Seasonal Stream-Flow in Thousands of Acre Feet FORECAST RUNOFF | % 10-Yr AVG. | FORE-CAST PERIOD | Measured Runoff* 1953 | 1952 | 10-Yr. Avg. 1943-52 |
|---|---|---|---|---|---|---|
| SUN RIVER | | | | | | |
| Vaughn (near) (6) | 379 | 83 | Apr-Sept | 790 | 312 | 458 |
| | 380 | 88 | Apr-July | 745 | 284 | 431 |
| MARIAS RIVER | | | | | | |
| Shelby (near) | 445 | 70 | Apr-Sept | 934 | 476 | 635 |
| | 409 | 70 | Apr-July | 871 | 435 | 582 |
| Brinkman (near) | 450 | 71 | Apr-Sept | 1025 | 534 | 641 |
| | 414 | 71 | Apr-July | 963 | 491 | 587 |
| JUDITH RIVER | | | | | | |
| Utica (near) | 31 | 68 | Apr-Sept | 38 | 47 | 46 |
| | 28 | 68 | Apr-July | 36 | 45 | 42 |
| MUSSELSHELL RIVER | | | | | | |
| Harlowton (at) | 61 | 62 | Apr-Sept | 74 | 118 | 99 |
| | 57 | 62 | Apr-July | 66 | 109 | 91 |
| Mosby (at) | 107 | 57 | Apr-Sept | 124 | 172 | 178 |
| | 100 | 60 | Apr-July | 119 | 166 | 168 |
| YELLOWSTONE RIVER | | | | | | |
| Corwin Springs (at) | 1610 | 80 | Apr-Sept | 1649 | 2171 | 2012 |
| | 1343 | 80 | Apr-July | 1366 | 1867 | 1669 |
| Livingston (near) | 1598 | 69 | Apr-Sept | 1820 | 2417 | 2315 |
| | 1320 | 69 | Apr-July | 1496 | 2062 | 1908 |
| Billings (at) | 3126 | 71 | Apr-Sept | 3367 | 4642 | 4403 |
| | 2684 | 71 | Apr-July | 2854 | 4046 | 3758 |
| Miles City (at) | 5025 | 71 | Apr-Sept | 4648 | 6265 | 6997 |
| | 4300 | 72 | Apr-July | 3905 | 5341 | 5954 |
| Sidney (near) | 5173 | 71 | Apr-Sept | 4716 | 6857 | 7290 |
| | 4482 | 71 | Apr-July | 4053 | 6034 | 6297 |
| SHIELDS RIVER | | | | | | |
| Wilsall (near) | 34 | 75 | Apr-Sept | 61 | 50 | 45 |
| | 32 | 74 | Apr-July | 58 | 48 | 43 |
| Clyde Park (at) | 76 | 62 | Apr-Sept | 130 | 162 | 122 |
| | 71 | 63 | Apr-July | 122 | 154 | 113 |
| CLARK FORK RIVER | | | | | | |
| Chance (at) | 408 | 65 | Apr-Sept | 519 | 576 | 629 |
| | 365 | 65 | Apr-July | 469 | 517 | 557 |
| Edgar (at) | 452 | 68 | Apr-Sept | 528 | 613 | 665 |
| | 399 | 68 | Apr-July | 467 | 538 | 581 |
| Hyalite Cr. R.S.(at)(7) | 30 | 80 | Apr-Sept | 33 | 41 | 38 |
| | 26 | 81 | Apr-July | 29 | 34 | 32 |

(6) Observed flow plus change in Storage in Gibson, Willow Crk and Pishkin Res.
(7) Observed flow plus change in Storage in Hyalite Reservoir
(*) Preliminary data furnished by U. S. Geological Survey, subject to correction

# MONTANA STREAM-FLOW FORECASTS MAY 1, 1955

| MISSOURI RIVER BASIN YELLOWSTONE RIVER TRIB-UTARIES IN WYOMING | Seasonal Stream-Flow in Thousands of Acre Feet FORECAST RUNOFF | % 10-Yr AVG. | FORE-CAST PERIOD | Measured Runoff* 1953 | 1952 | 10-Yr. Avg. 1943-52 |
|---|---|---|---|---|---|---|
| WIND RIVER | | | | | | |
| Riverton (at) (8) | 270 | 47 | Apr-Sept | 291 | 374 | 575 |
| BIG HORN RIVER | | | | | | |
| Boysen Dam (below)(9) | 645 | 60 | Apr-Sept | 618 | 889 | 1079 |
| Kane (at) | 820 | 54 | Apr-Sept | 804 | 1282 | 1518 |
| St. Xavier (near) (10) | 1375 | 60 | Apr-Sept | 984 | 1286 | 2101 |
| BULL LAKE CREEK | | | | | | |
| Lenor (near) | 160 | 80 | Apr-Sept | 159 | 203 | 200 |
| POPO AGIE RIVER | | | | | | |
| Riverton (near) | 280 | 70 | Apr-Sept | 218 | 450 | 400 |
| GREYBULL RIVER | | | | | | |
| Meeteetse (at) | 130 | 56 | Apr-Sept | 157 | 278 | 233 |
| Basin (near) | 39 | 34 | Apr-Sept | 37 | 173 | 116 |
| SHOSHONE RIVER | | | | | | |
| Buffalo Bill Dam(be)(12) | 560 | 70 | Apr-Sept | 582 | 697 | 802 |
| Byron (at) (12) | 377 | 60 | Apr-Sept | 356 | 486 | 628 |
| TONGUE RIVER | | | | | | |
| Dayton (near) | 115 | 100 | Apr-Sept | 96 | 104 | 115 |
| Acme (near) | 247 | 90 | Apr-Sept | 200 | 239 | 274 |
| Decker(near)Montana(13) | 254 | 90 | Apr-Sept | | 249 | 283 |
| POWDER RIVER | | | | | | |
| Arvado (at) | 132 | 93 | Apr-Sept | 76 | 125 | 143 |
| Moorehead (at) Montana | 205 | 72 | Apr-Sept | 154 | 235 | 285 |
| Locate (at) Montana | 265 | 73 | Apr-Sept | 208 | 303 | 361 |
| CLEAR CREEK | | | | | | |
| Buffalo (near) | 34 | 85 | Apr-Sept | 27 | 35 | 40 |
| Arvado (near) | 101 | 80 | Apr-Sept | 72 | 100 | 126 |

(8) Observed flow plus Storage in Bull Lake and Pilot Butte Reservoirs
(9) Observed flow plus Storage in Boysen Reservoir
(10) Observed flow plus Storage in Boysen and Buffalo Bill Reservoirs
(11) Observed flow plus Storage in Bull Lake Reservoir
(12) Observed flow plus Storage in Buffalo Bill Reservoir
(13) Observed flow plus Storage in Tongue Reservoir
(*) Preliminary data furnished by U. S. Geological Survey subject to revision

# MONTANA STREAM-FLOW FORECASTS MAY 1, 1955

| UPPER COLUMBIA RIVER IN MONTANA | Seasonal Stream-Flow in Thousands of Acre Feet FORECAST RUNOFF | % 10-Yr AVG. | FORE-CAST PERIOD | Measured Runoff* 1953 | 1952 | 10-Yr. Avg. 1943-52 |
|---|---|---|---|---|---|---|
| CLARK FORK RIVER | | | | | | |
| Bonner (above) (14) | 751 | 88 | Apr-Sept | 808 | 833 | 853 |
| | 661 | 88 | Apr-July | 718 | 749 | 751 |
| | 569 | 88 | Apr-June | 619 | 673 | 644 |
| Missoula (above) | 1583 | 86 | Apr-Sept | 1887 | 1782 | 1841 |
| | 1416 | 86 | Apr-July | 1695 | 1619 | 1644 |
| | 1232 | 87 | Apr-June | 1435 | 1468 | 1417 |
| Missoula (below) | 2917 | 86 | Apr-Sept | 3185 | 3268 | 3392 |
| | 2660 | 86 | Apr-July | 2879 | 3011 | 3080 |
| | 2330 | 88 | Apr-June | 2370 | 2722 | 2652 |
| St. Regis (at) | 3890 | 86 | Apr-Sept | 4071 | 4338 | 4524 |
| | 3529 | 86 | Apr-July | 3701 | 3972 | 4110 |
| | 3052 | 89 | Apr-June | 3054 | 3572 | 3399 |
| Plains (near) (15) | 10600 | 88 | Apr-Sept | 11880 | 11550 | 12117 |
| | 9515 | 86 | Apr-July | 10950 | 10740 | 11096 |
| | 7920 | 83 | Apr-June | 9062 | 9641 | 9502 |
| Cabinet Gorge (at)(15) | 12000 | 88 | Apr-Sept | 13002 | 12554 | 13557 |
| | 10900 | 88 | Apr-July | 11767 | 11613 | 12388 |
| | 9253 | 87 | Apr-June | 9720 | 10336 | 10584 |
| BLACKFOOT RIVER | | | | | | |
| Bonner (near) | 890 | 90 | Apr-Sept | 1078 | 949 | 988 |
| | 802 | 90 | Apr-July | 977 | 869 | 893 |
| | 692 | 89 | Apr-June | 816 | 795 | 773 |
| RITTERROOT RIVER | | | | | | |
| Darby (near) | 510 | 86 | Apr-Sept | 557 | 608 | 593 |
| | 472 | 86 | Apr-July | 533 | 567 | 551 |
| | 415 | 86 | Apr-June | 430 | 517 | 484 |
| At Mouth (16) | 1310 | 86 | Apr-Sept | 1271 | 1486 | 1524 |
| | 1222 | 85 | Apr-July | 1184 | 1392 | 1437 |
| | 1079 | 87 | Apr-June | 935 | 1254 | 1235 |
| FLATHEAD RIVER N. Fk. | | | | | | |
| Columbia Falls (near) | 1749 | 94 | Apr-Sept | 2049 | 1745 | 1850 |
| | 1598 | 95 | Apr-July | 1875 | 1605 | 1682 |
| | 1372 | 96 | Apr-June | 1540 | 1415 | 1434 |
| Columbia Falls (at)(17) | 5409 | 88 | Apr-Sept | 6523 | 5733 | 6111 |
| | 5042 | 89 | Apr-July | 6075 | 5362 | 5665 |
| | 4419 | 90 | Apr-June | 5043 | 4804 | 4880 |
| Polson (near) (15) | 6287 | 87 | Apr-Sept | 7565 | 7029 | 7193 |
| | 5632 | 83 | Apr-July | 7081 | 6615 | 6770 |
| | 4498 | 82 | Apr-June | 5880 | 5930 | 5798 |

(14) Difference in observed flow, Clark Fork above Missoula & Blackfoot at Bonner
(15) Observed flow plus change in Storage in Flathead Lake & Hungry Horse Reservoir
(16) Difference in observed flow, Clark Fork above and below Missoula
(17) Observed flow plus change in Storage in Hungry Horse Reservoir
( *) Preliminary data furnished by U. S. Geological Survey, subject to correction

MONTANA STREAM-FLOW FORECASTS MAY 1, 1955

| UPPER COLUMBIA RIVER IN MONTANA | Seasonal Stream-Flow in Thousands of Acre Feet FORECAST RUNOFF | % 10-Yr. AVG | FORE-CAST PERIOD | Measured Runoff* 1953 | 1952 | 10-Yr. Avg. 1943-52 |
|---|---|---|---|---|---|---|
| MIDDLEFORK FLATHEAD RIVER | | | | | | |
| West Glacier (near) | 1600 | 88 | Apr-Sept | 2067 | 1682 | 1817 |
| | 1484 | 88 | Apr-July | 1926 | 1575 | 1686 |
| | 1273 | 88 | Apr-June | 1581 | 1408 | 1442 |
| SOUTHFORK FLATHEAD RIVER | | | | | | |
| Columbia Falls(near)(17) | 1920 | 85 | Apr-Sept | 2277 | 2067 | 2267 |
| | 1824 | 85 | Apr-July | 2172 | 1980 | 2147 |
| | 1624 | 86 | Apr-June | 1846 | 1824 | 1879 |
| SWAN RIVER | | | | | | |
| Big Fork (near) | 535 | 83 | Apr-Sept | 604 | 619 | 644 |
| | 476 | 83 | Apr-July | 534 | 556 | 570 |
| | 396 | 85 | Apr-June | 416 | 481 | 466 |

(17) Observed flow plus change in Storage in Hungry Horse Reservoir
(* ) Preliminary data furnished by U. S. Geological Survey, subject to correction


UPPER MISSOURI RIVER BASIN
SNOW SURVEY COURSES
IN
MONTANA & NORTHERN WYOMING
LEGEND
TOWNS AND CITIES
13D4 SNOW SURVEY COURSE
(14) IDAHO & WYOMING NUMBERS
STREAM GAGING STATIONS
DECEMBER 1954
U. S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE
BOZEMAN MONTANA
SCALE IN MILES
KOOTENAI
FLATHEAD
MARIAS
MILK
ST. MARY
PEND OREILLE
FLATHEAD
SOUTH FORK
TETON
SUN
UPPER MISSOURI
BLACKFOOT
BUTTERROOT
UPPER CLARK FORK
BIG HOLE
JEFFERSON
BEAVERHEAD
RUBY
MADISON
GALLATIN
MUSSELSHELL
LOWER YELLOWSTONE
UPPER YELLOWSTONE
CLARK FORK
SHOSHONE
BIG HORN
TONGUE
POWDER
GREYBULL
WIND
POPO AGIE
KALISPELL
GREAT FALLS
HELENA
BUTTE
BOZEMAN
BILLINGS
HAVRE
GLASGOW
LEWISTOWN
HARLOWTON
WILSALL
LIVINGSTON
CODY
MEETEETSE
WORLAND
THERMOPOLIS
RIVERTON
LANDER
SHERIDAN
BUFFALO
KAYCEE
REPRODUCED BY THE SOIL CONSERVATION SERVICE, CARTOGRAPHIC DIVISION, LINCOLN, NEBR.

# INDEX TO MONTANA & NORTHERN WYOMING SNOW COURSES

| Drainage Basin and Course Name | Montana Number | Elev. | Location Sec. Lat. | Twp. | Range Long. | Record Began | Measuring Dates[a] | Measured By: [b] |
|---|---|---|---|---|---|---|---|---|
| **JEFFERSON RIVER** | | | **MISSOURI RIVER DRAINAGE** | | | | | |
| (ROCK-BEAVERHEAD) | | | | | | | | |
| Lakeview Ridge | 11E3 | 7400 | 27 | 11S | 2W | 1948 | 3,4,5, | 9 |
| Lakeview Canyon | 11E4 | 6930 | 26 | 11S | 2W | 1948 | 3,4,5 | 9 |
| Limekiln | 12B2 | 6950 | 5 | 12S | 9W | 1948 | 3,4 | 1 |
| White Pine Ridge | 12E1 | 8850 | 18 | 11S | 9W | 1948 | 3,4 | 1 |
| (HORSE PRAIRIE) | | | | | | | | |
| Bloody Dick | 13D10 | 7600 | 12 | 8S | 16W | 1948 | 3,4 | 1 |
| Gold Stone | 13D9 | 8100 | 11 | 8S | 16W | 1948 | 3,4 | 1 |
| Lemhi Pass | 13E1 | 7480 | 9 | 10S | 15W | 1948 | 3,4 | 1 |
| Tarrell Creek | 13D12 | 6650 | 14 | 9S | 15W | 1948 | 3,4 | 1 |
| Trail Creek | 13E2 | 7090 | 15 | 10S | 15W | 1948 | 3,4 | 1 |
| Selway Junction | 13D11 | 6800 | 27 | 8S | 15W | 1948 | 3,4 | 1 |
| (BIG HOLE) | | | | | | | | |
| Big Hole Pass | 13D3 | 7400 | 28 | 3S | 18W | 1948 | 3,4 | 1 |
| Big Hole Pass-Below | 13D4 | 6900 | 24 | 3S | 18W | 1948 | 3,4 | 1 |
| East Boundary | 13D5 | 6700 | 22 | 3S | 17W | 1948 | 3,4 | 1 |
| Gibbons Pass | 13D2 | 7100 | 4 | 2S | 19W | 1934 | 1,2,3,4,5 | 1,2 |
| Jakuka Creek | 13D8 | 7340 | 25 | 7S | 16W | 1948 | 3,4 | 1 |
| Miner Forks | 13D6 | 7300 | 24 | 6S | 17W | 1948 | 3,4 | 1 |
| Miner Lake | 13D7 | 6720 | 10 | 6S | 16W | 1945 | 3,4,5 | 1 |
| (WISE RIVER) | | | | | | | | |
| Andrason Mdw. | 13D14 | 7000 | 18 | 3S | 12W | 1948 | 3,4 | 1 |
| Elk Horn | 13D15 | 8450 | 15 | 4S | 12W | 1934 | 3,4,5 | 2 |
| Wise River | 13D13 | 6300 | 15 | 2S | 12W | 1948 | 3,4 | 1 |
| (RUBY RIVER) | | | | | | | | |
| Cottonwood | 11E2 | 5900 | 24 | 10S | 3W | 1948 | 3,4 | 1 |
| Cottonwood (Upper) | 11E1 | 8400 | 30 | 10S | 2W | 1948 | 3,4 | 1 |
| Flashlight | 12D3 | 6950 | 22 | 8S | 7W | 1945 | 3,4,5 | 1 |
| Tobacco Root | 12D2 | 6900 | 13 | 4S | 4W | 1948 | 3,4 | 1 |
| Vigilante | 11D1 | 6125 | 28 | 9S | 3W | 1948 | 3,4 | 1 |
| **MADISON RIVER** | | | | | | | | |
| Hebgen | 11E5 | 6550 | 22 | 11S | 3E | 1934 | 1,2,3,4,5 | 2 |
| West Yellowstone | 11E7 | 6700 | 34 | 13S | 5E | 1934 | 1,2,3,4,5 | 2 |
| Norris Basin | 10E2 | 7500 | 44°-42' | | 110°-42' | 1935 | 3,4 | 5,6 |
| **GALLATIN RIVER** | | | | | | | | |
| Devil's Slide | 10D4 | 8100 | 14 | 5S | 6E | 1935 | 2,3,4,5 | 2,6 |
| Rood Meadow | 10D3 | 6600 | 22 | 4S | 6E | 1934 | 2,3,4,5 | 2,6 |
| Mystic Lake | 10D2 | 6600 | 30 | 3S | 7E | 1935 | 2,3,4 | 6,7 |
| New World | 10D1 | 6700 | 24 | 3S | 6E | 1939 | 1,2,3,4,5 | 6,7 |
| 21-Mile | 11F6 | 7150 | 1 | 11S | 5E | 1934 | 1,2,3,4,5 | 2 |
| **MISSOURI RIVER MAIN STEM** | | | | | | | | |
| Chessman Reservoir | 12E5 | 6200 | 2 | 8N | 5W | 1936 | 1,2,3,4,5 | 2 |
| Crystal Lake | 9C1 | 6100 | 19 | 12N | 18E | 1941 | 3,4 | 1 |
| Grasshopper | 10C2 | 7000 | 19 | 9N | 8E | 1938 | 3,4 | 1,12 |
| Kings Hill | 10C1 | 7950 | 35 | 13N | 7E | 1937 | 3,4,5 | 2 |
| Picnic Grounds | 12C6 | 6500 | 10 | 5N | 6W | 1940 | 2,3,4 | 3 |
| Pipestone Pass | 12D1 | 7200 | 11 | 1N | 7W | 1938 | 2,3,4,5 | 12 |
| Stemple Pass | 12C1 | 6900 | 16 | 13N | 7W | 1934 | 3,4,5 | 2 |
| Ten Mile Cr.,Lower | 12C2 | 6250 | 13 | 8N | 6W | 1935 | 1,2,3,4,5 | 2 |
| Ten Mile Cr.,Middle | 12C3 | 6800 | 13 | 8N | 6W | 1934 | 1,2,3,4,5 | 2 |
| Ten Mile Cr., Upper | 12C4 | 8000 | 19 | 8N | 5W | 1935 | 1,2,3,4,5 | 2 |
| (TETON RIVER) | | | | | | | | |
| Freight Creek | 12A1 | 6000 | 13 | 26N | 10W | 1948 | 3,4 | 1,12 |
| Waldron Creek | 12B2 | 5600 | 16 | 25N | 9W | 1948 | 3,4 | 1,12 |
| West Fork | 12B1 | 6000 | 6 | 25N | 9W | 1948 | 3,4 | 1,12 |
| (SUN RIVER) | | | | | | | | |
| Benchmark | 12B8 | 5500 | 9 | 20N | 10W | 1948 | | 1 |
| Cabin Creek | 12B6 | 5400 | 33 | 23N | 10W | 1949 | 3,4 | 1 |
| 5-Bull | 12B9 | 5600 | 36 | 20N | 10W | 1948 | | 1 |
| Cetos Park | 12B5 | 5300 | 31 | 24N | 10W | 1949 | 3,4 | 1 |
| Coat Mountain | 12B7 | 7000 | 20 | 22N | 10W | 1934 | 3,4 | 2 |
| Wrong Ridge | 12B3 | 6800 | 17 | 25N | 10W | 1949 | 3,4 | 1 |
| Wrong Creek | 12B4 | 5700 | 32 | 25N | 10W | 1949 | 3,4 | 1 |
| (MARIAS RIVER) | | | | | | | | |
| Marias Pass | 13A5 | 5250 | 34 | 30N | 14W | 1936 | 1,2,3,4,5 | 2 |
| (MILK RIVER) | | | | | | | | |
| Rocky Boy | 9A1 | 5200 | 15 | 28N | 16E | 1941 | 3,4 | 7 |
| (MUSSELSHELL RIVER) | | | | | | | | |
| Grasshopper | 10C3 | 7000 | 19 | 9N | 8E | 1938 | 3,4 | 1,12 |
| (UPPER YELLOWSTONE) | | | | | | | | |
| Camp Senia | 9D1 | 7890 | 2 | 8S | 18E | 1937 | 4, | 1,12 |
| Canyon | 10E3 | 7750 | 44°-44' | | 110°-30' | 1938 | 1,2,3,4,5 | 12 |
| Cooks City | 10D7 | 7400 | 25 | 9S | 14E | 1937 | 1,2,3,4,5 | 5 |
| Crevice Mt. | 10D5 | 8400 | 22 | 9S | 9E | 1935 | 3,4 | 1 |
| Independence | 10D6 | 8000 | 22 | 7S | 12E | 1941 | 3,4 | 12 |
| Lake Camp | 10E4 | 7850 | 44°-34' | | 110°-24' | 1937 | 1,2,3,4,5 | 12 |
| Lupins Creek | 10E1 | 7300 | 44°-54' | | 110°-37' | 1938 | 1,2,3,4,5 | 5 |
| (SHIELDS RIVER) | | | | | | | | |
| Porcupine | 10C3 | 6500 | 10 | 4N | 10E | 1938 | 3,4 | 1 |
| **LOWER YELLOWSTONE** | | | | | | | | |
| (WIND RIVER) Wyoming | | | | | | | | |
| Brooks Lake #3 | 10F8 | 9200 | 23 | 44N | 110W | 1939 | 2,3,4,5 | 12 |
| Burroughs Creek | 9F4 | 8800 | 15 | 43N | 107W | 1948 | 2,3,4,5 | 12 |
| Dinwoodie | 9F10 | 10000 | 21 | 39N | 109W | 1948 | 2,3,4,5 | 12 |
| Dry Creek | 9F9 | 9500 | 34 | 4N | 6W | 1948 | 2,3,4,5 | 12 |
| DuNoir | 9F6 | 8750 | 27 | 42N | 108W | 1940 | 2,3,4,5 | 12 |
| Geyser Creek | 9F7 | 8500 | 12 | 41N | 108W | 1948 | 2,3,4,5 | 12 |
| Hobbs Park | 9G3 | 10000 | 22 | 2S | 3W | 1949 | 2,3,4,5 | 12 |
| Little Warm | 9F8 | 9500 | 24 | 41N | 108W | 1948 | 2,3,4,5 | 12 |
| Mosquito Park R.S. | 9G4 | 9500 | 23 | 2S | 3W | 1940 | 2,3,4,5 | 12 |
| Sheridan R.S. | 9F5 | 7500 | 3 | 42N | 109W | 1939 | 2,3,4,5 | 12 |
| St. Lawrence R.S. | 9F11 | 9000 | 26 | 1N | 4W | 1940 | 2,3,4,5 | 12 |
| T-Cross Ranch | 9F3 | 8000 | 1 | 43N | 107W | 1940 | 2,3,4,5 | 12 |
| Trout Creek | 9G2 | 8400 | 5 | 2S | 2W | 1948 | 2,3,4,5 | 12 |
| Togwotee Pass | 10F9 | 9600 | 29 | 44N | 110W | 1936 | 2,3,4,5 | 10 |

| Drainage Basin and Course Name | Montana Number | Elev. | Location Sec. Lat. | Twp. | Range Long. | Record Began | Measuring Dates[a] | Measured By: [b] |
|---|---|---|---|---|---|---|---|---|
| **MISSOURI RIVER DRAINAGE CONT.** | | | | | | | | |
| (POPO AGIE RIVER) Wyoming | | | | | | | | |
| Blue Ridge | 8G2 | 9500 | 23 | 31N | 101W | 1939 | 2,3,4,5 | 12 |
| Grannior Meadows | 8G4 | 9000 | 19 | 30N | 100W | 1936 | 2,3,4,5 | 12 |
| Larsen Creek | 9G6 | 9000 | 12 | 30N | 103W | 1948 | 3,4,5 | 12 |
| Sawmill Glade | 8G1 | 8500 | 3 | 31N | 101W | 1939 | 2,3,4,5 | 12 |
| South Pass | 8G3 | 9000 | 13 | 30N | 101W | 1939 | 2,3,4,5 | 12 |
| (BIG HORN RIVER) Wyoming | | | | | | | | |
| Beavers Mill | 9F2 | 8900 | 6 | 43N | 102W | 1948 | 2,3,4,5 | 12 |
| Owl Creek | 8F1 | 8700 | 36 | 43N | 101W | 1948 | 2,3,4,5 | 12 |
| Tensleep R.S. | 7E7 | 8300 | 30 | 49N | 86W | 1935 | 4,5 | 1 |
| Timber Crook | 9E2 | 8800 | 25 | 47N | 103W | 1948 | 4,5 | 12 |
| Rangor Creek | 7E4 | 8800 | 32 | 53N | 88W | 1935 | 4,5 | 1 |
| Wood River | 9F1 | 8000 | 28 | 46N | 103W | 1939 | 2,3,4,5 | 12 |
| (Shoshone River) Wyoming | | | | | | | | |
| East Entrance | 10E6 | 7000 | 17 | 52N | 109W | 1948 | 1,2,3,4,5 | 5 |
| Sylvan Pass | 10E5 | 7100 | 12 | 52N | 110W | 1936 | 1,2,3,4,5 | 5 |
| (TONGUE RIVER) Wyoming | | | | | | | | |
| Big Goose | 7E2 | 7700 | 4 | 53N | 86W | 1945 | 2,3,4,5 | 1 |
| Burgess Rangor Sta. | 7E1 | 7900 | 36 | 56N | 89W | 1950 | 2,3,4,5 | 12 |
| Osmo Lake | 7E3 | 8600 | 11 | 53N | 87W | 1950 | 2,3,4,5 | 12 |
| Lodgepole | 9E1 | 8200 | 32 | 56N | 106W | 1940 | 4,5 | 1 |
| **POWDER RIVER** | | | | | | | | |
| North Powder | 7E9 | 8500 | 5 | 47N | 85W | 1951 | 2,3,4,5 | 12 |
| Muddy Pass | 7E8 | 9700 | 11 | 48N | 85W | 1950 | 2,3,4,5 | 1 |
| Soldier Park | 7E5 | 8700 | 36 | 51N | 85W | 1950 | 2,3,4,5 | 12 |
| Sour Dough | 7E6 | 8500 | 17 | 49N | 84W | 1936 | 2,3,4,5 | 1 |
| **COLUMBIA RIVER BASIN** | | | | | | | | |
| **KOOTENAI RIVER** | | | | | | | | |
| Baree Mountain | 15R1 | 6000 | 1 | 25N | 31W | 1937 | 4,5,5½ | 1 |
| Blue Bird Basin | 11A1 | 6800 | 24 | 37N | 26W | 1937 | 4,5,5½ | 1 |
| Red Mountain | 15A1 | 6000 | 4 | 36N | 29W | 1937 | 3,4,5,5½ | 1 |
| Wasael Divids | 11A7 | 5450 | 8 | 37N | 24W | 1955 | 4,5,5½ | 1 |
| **FLATHEAD RIVER** | | | | | | | | |
| Basin Creek | 13B14 | 5000 | 11 | 19N | 12W | 1951 | 2,3,4,5 | 1 |
| Big Creek | 13B3 | 6750 | 6&7 | 22N | 18W | 1941 | 3,4,5 | 4 |
| Brush Crsek | 11A4 | 5000 | 13 | 30N | 26W | 1937 | 3,4,5 | 1 |
| Cattle Quson | 13A1 | 4700 | 7 | 35N | 17W | 1939 | 3,4,5 | 5 |
| Desert Mountain | 13A2 | 5600 | 24 | 31N | 19W | 1937 | 1,2,3,4,5 | 1 |
| Hell Roaring Divids | 11A3 | 5770 | 35 | 32N | 22W | 1942 | 3,4,5 | 1 |
| Holbrook | 13B13 | 4530 | 18 | 21N | 13W | 1951 | 1,2,3,4,5 | 1 |
| Kishenehn | 11A2 | 4300 | 7 | 37N | 21W | 1946 | 4,5 | 5 |
| Kishenehn #3 | 11A6 | 4000 | 14 | 37N | 22W | 1954 | 4,5 | 5 |
| Logan Creek | 11A5 | 4300 | 34 | 30N | 21W | 1937 | 3,4,5 | 1 |
| Marias Pass | 13A5 | 5250 | 34 | 30N | 11W | 1934 | 1,2,3,4,5 | 2 |
| Spotted Bear Mt. | 13B2 | 7000 | 23 | 25N | 15W | 1948 | 3,4,5 | 1 |
| Strawberry Lake | 13A10 | 6500 | 11 | 28N | 19W | 1948 | 3,4,5 | 1 |
| Trinkus Lake | 13R1 | 6500 | 9 | 25N | 17W | 1948 | 3,4,5 | 1 |
| Trout Lake #2 | 13A12 | 3600 | 21 | 28N | 17W | 1948 | 3,4,5 | 1 |
| Upper Holland Lake | 13B5 | 7000 | 28 | 20N | 16W | 1948 | 3,4,5 | 1 |
| Twin Creeks | 13R11 | 3580 | 14 | 26N | 16W | 1951 | 2,3,4,5 | 1 |
| Quintonkon | 13A13 | 3800 | 11 | 26N | 17W | 1951 | 2,3,4,5 | 1 |
| Coyots Hill | 13B10 | 4200 | 12 | 18N | 16W | 1952 | 1,2,3,4,5 | 1 |
| El Dorado Mine | 13C9 | 7800 | 23 | 8N | 12W | 1946 | 4 | 12 |
| Cold Creek Lake | 13C8 | 7200 | 14 | 8N | 12W | 1946 | 4 | 12 |
| Intergaard | 13C4 | 6450 | 6 | 5N | 13W | 1939 | 2,3,4 | 3 |
| Lubrecht Forest # 6 | 13C8 | 5400 | 31 | 14N | 15W | 1951 | 1,2,3,4,5 | 13 |
| North Fork Jocko | 13B7 | 6330 | 3 | 17N | 17W | 1941 | 3,4,5 | 4 |
| Picnic Grounds | 12C6 | 6500 | 10 | 5N | 6W | 1940 | 2,3,4 | 3 |
| Pipestone Pass | 12D1 | 7200 | 11 | 1N | 7W | 1938 | 2,3,4,5 | 1 |
| Slide Rock Mountain | 13C2 | 7100 | 26 | 10N | 16W | 1937 | 4 | 1,12 |
| Southern Cross | 13C5 | 6500 | 8 | 5N | 13W | 1939 | 2,3,4 | 3 |
| Stemple Pass | 13C1 | 6900 | 16 | 13N | 7W | 1934 | 3,4,5 | 2 |
| Storm Lake No. 2 | 13C7 | 7780 | 19 | 4N | 13W | 1939 | 2,3,4 | 1 |
| Stuart Mill | 13C6 | 6500 | 19 | 5N | 13W | 1939 | 2,3,4 | 3 |
| Stuart Mountain #1 | 13C1 | 7400 | 6 | 14N | 18W | 1936 | 4 | 1,12 |
| **PEND OREILLE RIVER** | | | | | | | | |
| Barss Mountain | 13B1 | 6000 | 1 | 25N | 31W | 1937 | 4,5,5½ | 1 |
| Fresssout Summit #2 | 15R10 | 6800 | 21 | 15N | 27W | 1951 | 4,5 | 1 |
| Hoodoo Creek | 15C1 | 6200 | 9&16 | 14N | 27W | 1937 | 4,5 | 1 |
| **BITTERROOT RIVER** | | | | | | | | |
| East Pork Ranger Sta. | 13D1 | 5400 | 16 | 2N | 17W | 1937 | 4 | 1,12 |
| Gibbons Pass | 13D2 | 7100 | 4 | 2S | 19W | 1934 | 1,2,3,4,5 | 1,12 |
| Mud Creek Pasture | 11C1 | 4500 | 24 | 11N | 24W | 1937 | 3 | 1 |
| Nez Perce Camp | 11D2 | 5580 | 19&20 | 1S | 23W | 1937 | 3,4,5 | 1,12 |
| Nez Perce Pass | 11D1 | 6575 | 32 | 28R | 16E | 1937 | 3,4,5 | 1,12 |
| Skalkaho Summit | 13C3 | 7259 | 30 | 6N | 17W | 1937 | 4 | 1,12 |
| **SASKATCHEWAN RIVER BASIN** | | | | | | | | |
| **ST. MARY RIVER** | | | | | | | | |
| Iceberg Lake | 13A3 | 6000 | 48°-50' | | 113°-42' | 1922 | 5 | 2,8 |
| Piegan Pass #4 | 13A4 | 5000 | 48°-46' | | 113°-40' | 1922 | 5 | 2,8 |
| Piegan Pass #6 | 13A6 | 6500 | 48°-45' | | 113°-42' | 1922 | 5 | 2,8 |
| Mount Allen #7 | 13A7 | 7000 | 48°-44' | | 113°-40' | 1922 | 5 | 2,8 |
| Ptarmigan #8 | 13A8 | 5800 | 48°-50' | | 113°-42' | 1922 | 5 | 2,8 |

a. Numerals 1,2,3,4 and 5 refer to January 1, February 1, March 1, April 1, and May 1.

b. Numerals refer to Agency that secures the snow survey as follows:

1. U.S. Forest Service
2. U.S. Geological Survey
3. Montana Power Company
4. U.S. Indian Service
5. National Park Service
6. Montana Experiment Station
7. City of Bozeman
8. Dominion Water & Power Bureau
9. U.S. Fish and Wildlife Service
10. U.S. Bureau of Reclamation
11. Deer Lodge Citizens Committee
12. Soil Conservation Service
13. Montana State Forestry School

5,M-11,484-A

# MONTANA SNOW SURVEYS - MAY 1, 1955

| MISSOURI BASIN DRAINAGE BASIN AND SNOW COURSE | No. | Elev. | Date of Survey | SNOW COVER MEASUREMENTS 1955 Snow Depth (In.) | 1955 Water Content (In.) | Past Record Water Content (In.) 1954 | 1953 | Average | Years Record |
|---|---|---|---|---|---|---|---|---|---|
| **JEFFERSON RIVER** | | | | | | | | | |
| Lakeview Ridge | 11E3 | 7400 | 5/2 | 30 | 11.8 | -- | 7.6 | 6.4 | 4 |
| Lakeview Canyon | 11E4 | 6930 | 5/2 | 33 | 11.5 | -- | 11.7 | 10.0 | 4 |
| Gibbons Pass (Wise River) | 13D2 | 7100 | 4/28 | 65 | 24.3 | 23.8 | 28.7 | 20.5 | 19 |
| Elk Horn | 13D15 | 8450 | 4/29 | 40 | 11.0 | 7.7 | 10.2 | 6.1 | 12 |
| **MADISON RIVER** | | | | | | | | | |
| Hebgen | 11E5 | 6550 | 4/28 | 23 | 7.8 | 0.0 | 6.2 | 2.8 | 21 |
| W. Yellowstone | 11E7 | 6700 | 4/28 | 22 | 8.4 | 2.8 | 5.8 | 3.7 | 21 |
| 21-Mile | 11E6 | 7150 | 4/29 | 42 | 15.0 | 14.4 | 12.5 | 10.9 | 21 |
| *Big Springs | 11E9 | 6500 | | | | -- | -- | 15.5 | 4 |
| *Island Park | 11E10 | 3600 | | | | | -- | 6.5 | 5 |
| *Valley View | 11E8 | 6500 | | | | -- | -- | 9.2 | 2 |
| Norris Basin | 10E2 | 7500 | 5/2 | 25.8 | 8.3 | 6.3 | -- | 3.4 | 4 |
| **GALLATIN RIVER** | | | | | | | | | |
| Devil's Slide | 10D4 | 8100 | 4/30 | 65 | 22.8 | 10.1 | 23.3 | 21.4 | 20 |
| Hood Meadow | 10D3 | 6600 | 4/30 | 28 | 10.4 | 3.7 | 5.2 | 4.2 | 20 |
| New World | 10D1 | 6700 | 5/2 | 39 | 15.5 | | | | |
| 21-Mile | 11E6 | 7150 | 4/29 | 42 | 15.0 | 14.4 | 12.5 | 10.9 | 21 |
| **MISSOURI RIVER MAIN STEM** | | | | | | | | | |
| Chessman Res. | 12C5 | 6200 | 4/28 | 25 | 7.4 | 1.2 | 3.5 | 1.6 | 19 |
| Kings Hill | 10C1 | 7950 | 4/28 | 53 | 16.1 | 14.6 | 12.4 | 11.8 | 14 |
| Pipestone Pass | 12D1 | 7200 | 4/27 | 40 | 9.8 | 1.3 | 7.1 | 2.2 | 15 |
| Stemple Pass | 12C1 | 6900 | 4/28 | 40 | 11.4 | 13.4 | 8.8 | 6.3 | 20 |
| Tenmile, Lower | 12C2 | 6250 | 4/29 | 29 | 8.4 | 3.5 | 5.4 | 2.3 | 19 |
| Tenmile, Middle | 12C3 | 6800 | 4/29 | 45 | 13.8 | 10.1 | 11.8 | 6.8 | 20 |
| Tenmile, Upper (Marias River) | 12C4 | 8000 | 4/29 | 56 | 17.7 | 14.9 | 16.2 | 10.8 | 19 |
| Marias Pass | 13A5 | 5250 | 4/29 | 39 | 16.0 | 33.0 | 17.4 | 11.4 | 20 |
| **UPPER YELLOWSTONE** | | | | | | | | | |
| Canyon | 10E3 | 7750 | 4/28 | 45 | 14.5 | -- | -- | 1.1 | 6 |
| Cooke City | 10D7 | 7400 | 5/1 | 18 | 6.6 | 5.2 | 5.4 | 5.0 | 10 |
| Lake Camp | 10E4 | 7850 | 4/30 | 28 | 8.7 | 8.1 | 6.5 | 7.7 | 9 |
| Lupine | 10E1 | 7300 | 5/2 | 26 | 11.5 | 9.5 | 9.0 | 6.1 | 6 |
| *Lewis Lake Div. | 10E9 | 7000 | 4/29 | 10.5 | 40.8 | 49.0 | 41.2 | 44.9 | 3 |
| Lodgepole, Wyo. | 9E1 | 8200 | 4/30 | 28 | 9.2 | 11.8 | 11.3 | 8.9 | 17 |

*Adjacent Basin

# MONTANA SNOW SURVEYS - MAY 1, 1955

| MISSOURI BASIN DRAINAGE BASIN AND SNOW COURSE | No. | Elev. | Date of Survey | SNOW COVER MEASUREMENTS 1955 Snow Depth (In.) | 1955 Water Content (In.) | Past Record Water Content (In.) 1954 | 1953 | Average | Years Record |
|---|---|---|---|---|---|---|---|---|---|
| LOWER YELLOWSTONE (Wind River above Diversion Dam) | | | | | | | | | |
| Brooks Lake #3 | 10F8 | 9200 | 4/23 | 69 | 27.9 | 32.3 | 28.6 | 25.8 | 19 |
| Burroughs Creek | 9F4 | 8800 | 4/26 | 29 | 9.4 | 16.7 | 17.0 | 16.4 | 6 |
| Du Noir | 9F6 | 8750 | 4/25 | 21 | 6.8 | 8.3 | 6.3 | 6.9 | 13 |
| Geyser Creek | 9F7 | 8500 | 4/25 | 22 | 7.1 | 6.5 | 5.8 | 5.4 | 6 |
| Little Warm | 9F8 | 9500 | 4/25 | 61 | 19.2 | 23.3 | 19.0 | 21.9 | 6 |
| Sheridan | 9F5 | 7500 | 4/23 | 11 | 4.7 | 4.6 | 5.8 | 2.4 | 14 |
| T-Cross Ranch | 9F3 | 8000 | 4/26 | 8 | 2.7 | 5.8 | 5.5 | 3.9 | 13 |
| *Togwotee Pass | 10F9 | 9600 | 4/29 | 84 | 30.6 | 37.0 | 31.7 | 33.8 | 6 |
| Dinwoodie | 9F10 | 10000 | 4/22 | 38 | 11.9 | 16.9 | 14.9 | 15.5 | 6 |
| Dry Creek | 9F9 | 9500 | 4/22 | 21 | 5.7 | 8.6 | 9.4 | 8.3 | 6 |
| Hobbs Park | 9G3 | 10000 | 4/29 | 53 | 19.0 | 22.6 | 11.9 | 23.1 | 6 |
| Mosquito Park | 9G4 | 9500 | 4/29 | 22 | 8.0 | 7.4 | 7.7 | 7.1 | 9 |
| St. Lawrence | 9F11 | 9000 | 4/30 | 20 | 6.8 | 5.4 | 5.1 | 7.4 | 11 |
| Trout Creek | 9G2 | 8400 | 4/29 | 2 | 0.8 | 0.0 | 4.7 | 2.4 | 6 |
| *Kendall | 9F12 | 7900 | | | | 2.2 | 6.8 | 6.0 | 19 |
| *Loomis Park | 10F16 | 8500 | | | | 17.3 | 15.1 | 11.4 | 19 |
| *Black Rock | 10F7 | 8600 | | | | -- | 0 | 10.8 | 7 |
| *Yellow Jacket | 10F10 | 6775 | | | | 0 | 0 | .9 | 3 |
| POPO AGIE RIVER | | | | | | | | | |
| Blue Ridge | 8G2 | 9500 | 5/1 | 28 | 11.0 | 12.3 | 9.3 | 12.4 | 15 |
| Grannier Meadows | 8G4 | 9000 | 5/1 | 35 | 13.1 | 16.0 | 9.7 | 13.8 | 18 |
| *Larsen Creek | 9G6 | 9000 | 4/24 | 4 | 1.7 | 0 | 0 | 8.2 | 5 |
| Sawmill Glade | 8G1 | 8500 | 5/1 | 8 | 3.2 | 2.0 | 5.6 | 6.8 | 15 |
| South Pass | 8G3 | 9000 | 5/1 | 37 | 14.0 | 16.8 | 10.2 | 14.6 | 15 |
| Mulligan Park | 9G1 | 8900 | 4/26 | 20 | 6.0 | 8.5 | 6.5 | 6.9 | 19 |
| *Dutch Joe | 9G5 | 8700 | 4/24 | 5 | 1.9 | 0.9 | 0.6 | 4.5 | 16 |

*Adjacent Basin

# MONTANA SNOW SURVEYS - MAY 1, 1955

| MISSOURI BASIN DRAINAGE BASIN AND SNOW COURSE | No. | Elev. | Date of Survey | SNOW COVER MEASUREMENTS 1955 Snow Depth (In.) | 1955 Water Content (In.) | Past Record Water Content (In.) 1954 | 1953 | Average | Years Record |
|---|---|---|---|---|---|---|---|---|---|
| **BIG HORN RIVER - WYOMING** | | | | | | | | | |
| Beavers Mill | 9F2 | 8900 | 5/4 | 20 | 5.1 | 8.7 | 14.3 | 8.0 | 6 |
| Owl Creek | 8F1 | 8700 | 5/4 | 20 | 5.8 | 7.1 | 10.4 | 7.7 | 6 |
| Timber Creek | 9E2 | 8800 | 4/30 | 9 | 2.7 | 3.1 | -- | 5.1 | 4 |
| Wood River | 9E1 | 8000 | 5/1 | 7 | 2.3 | 3.2 | 3.5 | 3.9 | 15 |
| Tensleep R. S. | 7E7 | 8200 | 4/29 | 19 | 7.1 | 3.6 | 5.8 | 4.4 | 19 |
| Ranger Creek | 7E4 | 8800 | 4/29 | 29 | 8.3 | 5.9 | 7.3 | 6.4 | 18 |
| **SHOSHONE RIVER** | | | | | | | | | |
| East Entrance | 10E6 | 7000 | 5/1 | 7 | 1.3 | -- | -- | 5.6 | 1 |
| Sylvan Pass | 10E5 | 7100 | 5/1 | 25 | 9.0 | -- | -- | 7.8 | 14 |
| **TONGUE RIVER** | | | | | | | | | |
| Burgess Jct. | 7E1 | 7900 | | | | 20.8 | 14.5 | 15.2 | 5 |
| Big Goose | 7E2 | 7700 | 5/3 | 7 | 2.6 | 1.1 | 5.9 | 2.8 | 18 |
| Dome Lake | 7E3 | 9000 | 5/2 | 24 | 7.9 | 8.9 | 11.2 | 7.2 | 6 |
| **POWDER RIVER** | | | | | | | | | |
| Sour Dough | 7E6 | 8500 | 4/29 | 17 | 4.2 | 5.5 | 6.7 | 5.1 | 18 |
| North Powder | 7E9 | 8500 | 5/4 | 16 | 5.5 | 2.0 | 3.0 | 3.4 | 3 |
| Soldier Park | 7E5 | 8700 | 5/5 | 12 | 4.5 | 3.6 | 3.8 | 4.3 | 4 |
| Muddy Pass | 7E8 | 9700 | 4/30 | 33 | 9.5 | 7.8 | 10.0 | 8.3 | 5 |

# MONTANA SNOW SURVEYS - MAY 1, 1955

| COLUMBIA BASIN DRAINAGE BASIN AND SNOW COURSE | No. | Elev. | Date of Survey | SNOW COVER MEASUREMENTS 1955 Snow Depth (In.) | Water Content (In.) | Past Record Water Content (In.) 1954 | 1953 | Average | Years Record |
|---|---|---|---|---|---|---|---|---|---|
| KOOTENAI RIVER (above Libby, Montana) | | | | | | | | | |
| Baree Mt. | 15B1 | 6000 | 5/3 | 103 | 43.5 | 57.2 | 42.2 | 40.9 | 18 |
| Blue Bird | 14A1 | 6800 | 4/28 | 118 | 43.0 | 59.4 | 45.5 | 38.1 | 16 |
| Brush Creek | 14A4 | 5000 | 4/28 | 39 | 13.9 | 10.3 | 18.6 | 7.4 | 11 |
| Fernie | Can | 3500 | 4/29 | 22 | 7.9 | 13.9 | 1.5 | 3.0 | 9 |
| New Fernie | Can | 4100 | 4/29 | 35 | 13.9 | 21.3 | 5.1 | 11.9 | 4 |
| Ferguson | Can | 3000 | 5/4 | 36 | 17.8 | 29.8 | 13.6 | 17.1 | 9 |
| Marble Canyon | Can | 5000 | 5/2 | 40 | 11.3 | 21.8 | 14.7 | 14.1 | 8 |
| Red Mountain | 15A1 | 6000 | 4/28 | 60 | 19.2 | 30.0 | 20.9 | 16.3 | 17 |
| Sinclair Pass | Can | 4500 | 5/2 | 15 | 5.5 | 8.4 | 1.7 | 2.2 | 8 |
| Smith Creek | 16A1 | 4800 | 5/2 | 111 | 50.0 | 61.8 | 50.3 | 37.3 | 16 |
| Sullivan Mine | Can | 5100 | 4/29 | 38 | 11.6 | 19.2 | 10.2 | 10.6 | 9 |
| Sandon | Can | 3500 | 5/1 | 34 | 13.7 | 15.7 | 18.9 | 5.8 | 9 |
| Weasel Divide | 14A7 | 5450 | 4/29 | 90 | 35.4 | -- | -- | -- | 1 |
| FLATHEAD RIVER | | | | | | | | | |
| Blue Bird | 14A1 | 6800 | 4/28 | 118 | 43.0 | 59.4 | 45.5 | 38.1 | 16 |
| Basin Creek | 13B14 | 5000 | 4/28 | 17 | 6.1 | 6.3 | 0.0 | 2.1 | 4 |
| Big Creek | 13B3 | 6750 | 5/3 | 102 | 43.4 | 49.0 | 45.9 | 44.5 | 6 |
| Brush Creek | 14A4 | 5000 | 4/28 | 39 | 13.9 | 10.3 | 18.6 | 7.4 | 11 |
| Cattle Queen | 13A1 | 4700 | | | | | | | |
| Coyote Hill | 13B10 | 4200 | 5/2 | 10 | 4.8 | 5.6 | 3.7 | 2.3 | 8 |
| Desert Mountain | 13A2 | 5600 | 5/2 | 37 | 14.4 | 17.8 | 13.3 | 10.7 | 18 |
| Hell Roaring Div. | 14A3 | 5700 | 5/2 | 73 | 27.9 | 35.7 | 30.2 | 27.6 | 13 |
| Holbrook | 13B13 | 4530 | 4/28 | 14 | 5.3 | 4.6 | 0.0 | 1.5 | 4 |
| Kiskenehn #2 | 14A2 | 4300 | | | | | | | |
| Kishenehn #3 | 14A6 | 4000 | | | | | | | |
| Logan Creek | 14A5 | 4300 | 4/29 | 21 | 7.3 | 7.2 | 1.6 | 1.5 | 16 |
| Marias Pass | 13A5 | 5250 | 4/29 | 39 | 16.0 | 33.0 | 17.4 | 11.4 | 20 |
| N. Fork Jocko | 13B7 | 6330 | 5/2 | 104 | 45.6 | 50.3 | 42.9 | 38.8 | 7 |
| Quintonkon | 13A13 | 3800 | 4/30 | 22 | 10.0 | 11.9 | 3.5 | 6.5 | 4 |
| Spotted Bear Mt. | 13B2 | 7000 | 4/29 | 36 | 12.5 | 17.6 | 6.9 | 12.4 | 4 |
| Strawberry Lake | 13A10 | 6500 | 5/2 | 93 | 39.7 | 45.7 | 40.5 | 41.3 | 6 |
| Trinkus Lake | 13B1 | 6500 | 4/29 | 97 | 42.1 | 50.0 | 37.9 | 42.2 | 6 |
| Trout Lake | 12A12 | 3600 | 4/28 | 41 | 14.5 | 14.9 | -- | 10.0 | 6 |
| Twin Creeks | 13B11 | 3580 | 4/28 | 12 | 4.5 | 4.4 | 0.0 | 1.1 | 4 |
| Upper Holland | 13B5 | 7000 | 4/28 | 88 | 33.9 | 46.2 | 34.1 | 37.0 | 4 |

*Adjacent Basin

Errata: April 1 data for Hell Roaring Divide should have been:

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | 14A3 | 5700 | 4/4 | 73 | 25.1 | 37.9 | 29.2 | 30.5 | 13 |

# MONTANA SNOW SURVEYS - MAY 1, 1955

| COLUMBIA BASIN DRAINAGE BASIN AND SNOW COURSE | No. | Elev. | Date of Survey | SNOW COVER MEASUREMENTS 1955 Snow Depth (In.) | Water Content (In.) | Past Record Water Content (In.) 1954 | 1953 | Average | Years Record |
|---|---|---|---|---|---|---|---|---|---|
| **UPPER CLARK FORK** | | | | | | | | | |
| Coyote Hill | 13B10 | 4200 | 5/2 | 10 | 4.8 | 5.6 | 3.7 | 2.3 | 8 |
| Chessman Res. | 12C5 | 6200 | 4/28 | 25 | 7.4 | 1.2 | 3.5 | 1.6 | 19 |
| Lubrecht Forest#6 | 13C8 | 5400 | 4/29 | 00 | 00 | 0 | 0 | 0 | 4 |
| North Fork Jocko | 13B7 | 6330 | 5/2 | 104 | 45.6 | 50.3 | 42.9 | 38.8 | 7 |
| Pipestone Pass | 12D1 | 7200 | 4/27 | 40 | 9.8 | 1.3 | 7.1 | 2.2 | 15 |
| Stemple Pass | 12C1 | 6900 | 4/28 | 40 | 11.4 | 13.4 | 8.8 | 6.3 | 20 |
| Storm Lake #2 | 13C7 | 7780 | 5/1 | 52 | 17.9 | 13.6 | -- | 13.6 | 13 |
| Tenmile, Lower | 12C2 | 6250 | 4/29 | 29 | 8.4 | 3.5 | 5.4 | 2.3 | 19 |
| Tenmile, Middle | 12C3 | 6800 | 4/29 | 45 | 13.8 | 10.1 | 11.8 | 6.8 | 20 |
| Tenmile, Upper | 12C4 | 8000 | 4/29 | 56 | 17.7 | 14.9 | 16.2 | 10.8 | 19 |
| *Lookout | 15B2 | 5250 | 5/2 | 78 | 33.6 | 47.2 | 29.8 | 24.4 | 18 |
| **BITTERROOT** | | | | | | | | | |
| Gibbons Pass | 13D2 | 7100 | 4/28 | 65 | 24.3 | 23.8 | 28.7 | 20.5 | 19 |
| Nezperce Pass | 14D1 | 6575 | 5/4 | 45 | 18.2 | 10.6 | 14.8 | 9.2 | 18 |
| Nezperce Camp | 14D2 | 5580 | 5/4 | 39 | 17.3 | 4.1 | 12.0 | 4.8 | 18 |
| *Moose Creek | 13D16 | 6200 | | | | | | 10.2 | 12 |
| *Powell Pasture | 14C3 | 3700 | 4/29 | 8 | 3.5 | -- | -- | 2.0 | 11 |
| *Packers Meadow | 14C2 | 5700 | 4/29 | 58 | 28.5 | 32.3 | -- | 4.2 | 17 |
| **PEND OREILLE** | | | | | | | | | |
| Baree Mountain | 15B1 | 6000 | 5/3 | 103 | 43.5 | 57.2 | 42.2 | 40.9 | 18 |
| Freezeout Summit | 15B10 | 7000 | 4/29 | 103 | 36.0 | 56.6 | -- | 29.8 | 13 |
| Hoodoo Creek | 15C1 | 6200 | 4/28 | 124 | 55.3 | 75.8 | -- | 40.1 | 12 |
| Smith Creek | 16A1 | 4800 | 5/2 | 111 | 50.0 | 61.8 | 50.3 | 37.3 | 16 |

*Adjacent Basin

## STATUS OF RESERVOIR STORAGE MAY 1, 1955

| BASIN & STREAM | RESERVOIR | USEABLE CAPACITY (M.A.F.) | THOUSAND ACRE FEET IN STORAGE ABOUT MAY FIRST 1955 | 1954 | 1953 | 10-yr.avg 1943-52 |
|---|---|---|---|---|---|---|
| **MISSOURI RIVER BASIN** | | | | | | |
| Beaverhead | Lima | 84.00 | | 32.4 | 65.6 | 77.8 |
| Madison River | Hebgen Lake | 345.00 | 212.5 | 291.6 | 267.5 | 300.0 |
| Madison River | Ennis Lake | 41.00 | 33.7 | 31.8 | 32.1 | 34.1 |
| Hyalite Creek | Middle Creek | 8.03 | 5.6 | 6.4 | 5.7 | -- |
| Missouri River | Canyon Ferry | 2,043.00 | 1,255.0 | 559.6 | 143.1 | -- |
| Missouri River | Hauser & Helena | 62.50 | 56.8 | 53.4 | 64.4 | 618.6 |
| Missouri River | Lake Helena | 10.45 | 8.4 | 7.4 | 11.1 | 1/ 10.1 |
| Missouri River | Holter Lake | 81.92 | 76.3 | 79.6 | 81.9 | 69.8 |
| N.Fk.Sun River | Gibson | 105.00 | 74.8 | 72.9 | 95.9 | 97.9 |
| N.Fk.Sun River | Willow Creek | 32.30 | 26.4 | 29.1 | 28.4 | 22.9 |
| N.Fk.Sun River | Pishkun | 32.00 | 19.2 | 24.4 | 29.8 | 29.7 |
| Birch Creek | Swift | 30.00 | 30.0 | 27.5 | 30.3 | 30.0 |
| Dupuyer & Birch | Lake Francis | 112.00 | 97.0 | 103.3 | 109.0 | 106.3 |
| Judith River | Ackley Lake | 5.82 | | 3.3 | -- | 5.3 |
| Missouri River | Fort Peck | 19,000.00 | 9,611.0 | 12,860.0 | 13,370.0 | 13,248.0 |
| Milk River | Fresno | 127.20 | 131.9 | 128.7 | 135.2 | 95.3 |
| Milk River | Nelson | 66.80 | 53.4 | 53.5 | 49.4 | 32.6 |
| W.Rosebud Crk | Mystic Lake | 20.80 | 2.5 | 7.3 | 2.8 | 6.4 |
| Red Lodge Crk | Cooney | 27.50 | | 18.0 | 23.5 | 17.0 |
| Tongue River | Tongue River | 73.90 | 28.2 | -- | 27.5 | 31.2 |
| Swiftcurrent Crk | Sherburne Lake | 66.10 | | -- | 29.6 | 39.2 |
| **MISSOURI RIVER BASIN - WYOMING** | | | | | | |
| Shoshone River | Buffalo Bill | 440.00 | 119.3 | 156.4 | 164.7 | 278.6 |
| Wind River | Boysen | 758.00 | 216.1 | 360.3 | 455.4 | 233.4 |
| Wind River | Pilot Butte | 31.6 | 29.4 | 25.3 | 29.4 | 20.5 |
| Bull Creek | Bull Lake | 152.00 | 61.1 | 62.3 | 51.0 | 51.5 |
| Belle Fourche | Key Hole | 190.00 | 32.1 | 8.4 | 11.8 | 0.5 |
| **MISSOURI RIVER BASIN - NORTH DAKOTA** | | | | | | |
| Heart River | Heart Butte | 54.80 | 60.7 | 63.7 | 62.2 | 3/ 69.2 |
| Heart River | Dickerson | 4.3 | 5.7 | 3.3 | 5.4 | 4/ 5.1 |
| **MISSOURI RIVER BASIN - SOUTH DAKOTA** | | | | | | |
| Belle Fourche | Belle Fourche | 185.00 | 101.7 | 136.4 | 76.6 | 146.2 |
| Cheyenne River | Angostura | 160.00 | 89.8 | 34.2 | 46.2 | 33.6 |
| Cheyenne River | Deerfield | 15.1 | 12.1 | 15.1 | 14.7 | 14.2 |
| Grand River | Shadehill | 84.00 | 79.7 | 83.3 | 83.4 | 118.8 |

1/ 7-yr. average
3/ 5-yr. average
4/ 4-yr. average

## STATUS OF RESERVOIR STORAGE MAY 1, 1955

| BASIN & STREAM | RESERVOIR | USEABLE CAPACITY (M.A.F.) | THOUSAND ACRE FEET IN STORAGE ABOUT MAY FIRST 1955 | 1954 | 1953 | 10-yr.avg. 1943-52 |
|---|---|---|---|---|---|---|
| COLUMBIA RIVER BASIN | | | | | | |
| Flint Creek | Georgetown Lk | 31.00 | 21.58 | 22.64 | 25.36 | 24.10 |
| S.Fk.Flathead | Hungry Horse | 3,500.00 | 2,107.0 | 2,526.0 | 1,481.0 5/ | 1,553.5 |
| Flathead River | Flathead Lake | 1,791.00 | 675.3 | 1,563.0 | 1,413.0 | 1,663.5 |
| Flathead River | Camas Res's | 42.80 | 41.1 | 41.99 | 38.22 6/ | 29.04 |
| Flathead River | Mission Valley | 98.60 | 60.2 | 33.88 | 53.43 7/ | 66.77 |
| Jocko Creek | Lower Jocko Lake | 7.6 | -- | 4.86 | 4.17 | 4.64 |

5/ 3-year average

6/ Camas Reservoirs are shown as a sum of (4) small reservoirs on the west side of Flathead Lake located on Dry Creek and Little Bitterroot River.

7/ Mission Valley Reservoirs are shown as a sum of (8) small reservoirs located south and east of Flathead Lake. Both Camas and Mission Valley reservoirs are operated by the Indian Irrigation Service.

Federal · State · Private

COOPERATIVE SNOW SURVEYS

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Furnishes the basic data necessary for forecasting water supply for irrigation, domestic and municipal water supply, hydro-electric power generation, navigation, mining and industry

"WATER IS THE WEST'S GREATEST RESOURCE"